

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested. Claims 1-29 are pending, Claims 1 and 2 having been amended by way of the present amendment.

In the outstanding Office Action Claims 1-3, 8, 12, 13, 16, 20-22, 24, 28 and 29 were rejected as being unpatentable over Ishikawa et al. (U.S. Patent No. 5,862,264) in view of Fu et al. (U.S. Patent No. 5,703,965), Fan (U.S. Patent No. 5,495,538) and Acharya et al. (U.S. Patent No. 6,229,578); Claims 4-6, 15, 25 and 26 were rejected as being unpatentable over Ishikawa et al. in view of Fu et al., Fan, Acharya, and Murakami et al. (U.S. Reissue Patent No 35,414); Claims 7 and 27 were rejected as being unpatentable over Ishikawa et al., Fu et al., Fan, Acharya, Murakami et al. and in further view of Webb et al. (U.S. Patent No. 6,621,909); Claims 9, 10, 17 and 18 were rejected as being unpatentable over Ishikawa et al. in view of Fu et al., Fan, Acharya and in further view of Su (U.S. Patent No. 4,162,482); Claims 11 and 19 were rejected as being unpatentable over Ishikawa et al. in view of Fu et al., Fan, Acharya, Su and in further view of Lee et al. (U.S. Patent No. 5,612,744); and Claims 14 and 23 were rejected as being unpatentable over Ishikawa et al. in view of Fu et al., Fan, Acharya et al. and in further view of Futamura (U.S. Patent No. 5,791,271).

The independent claims include steps of extracting edge information which is binary information representing an edge part of the original image. The method also includes the step of obtaining density information of an edge smoothed image from said original image by smoothing said edge part using said edge information. According to Claim 1, the edge information, which is binary information is extracted, and then density information of an edge smoothed image is obtained using the edge information. Then, encoding is performed. During decoding, each of the edge information and the density information of the edge

smoothed image is obtained by decoding, and the edge part of the edge smoothed image is sharpened by using the edge information.

In contrast, the primary reference of Ishikawa et al. is directed to obtaining a smoothed image (see, e.g., step 11 of Figure 1) and then an edge image is obtained by subtracting the smoothed image from the original image (see e.g., step 14, and the edge image GE). After the edge image is obtained, coding is performed. During image decoding, the edge image and the smoothed image are combined to output a restored image (see e.g., step 23 of Figure 1).

As acknowledged by the Office Action on page3, Ishikawa does not disclose or suggest that the edge information is binary and that the density information is obtained using said edge information. Despite these deficiencies, the outstanding Office Action nonetheless finds that Acharya provides the features missing in Ishikawa. Applicants respectfully disagree. Specifically, Acharya discloses a method for removing noise by distinguishing between edge and non-edge pixels and applying a first noise removal technique to pixels classified as non-edge pixels and a second noise removal technique to pixels classified as edge pixels, please see the Abstract. As discussed in Acharya at least at Column 9, lines 7-9 to Column 11, lines 32-52, the second noise removal technique has better edge preservation /enhancement characteristics. Accordingly, Acharya teaches an edge preservation/enhancement technique by removing noise, but does not disclose obtaining density information of an edge smoothed image.

Applicant respectfully asserts that there is no basis in the teachings of any of the applied art to support the applied combinations. When an obviousness determination is based on multiple prior art references, there must be a showing by the patent examiner of some “teaching, suggestion, or reason” to combine the references. Gambro Lundia AB v. Baxter Healthcare Corp., 110 F.3d 1573, 1579, 42 USPQ2d 1378, 1383 (Fed. Cir. 1997) (also noting

that the “absence of such a suggestion to combine is dispositive in an obviousness determination”). Whether motivation to combine the references is shown is a question of fact. See In re Dembiczak, 175 F.3d 994, 1000, 50 USPQ2d 1614, 1617 (Fed. Cir. 1999). Evidence of a suggestion, teaching, or motivation to combine prior art references may flow, *inter alia*, from the references themselves, the knowledge of one of ordinary skill in the art, or from the nature of the problem to be solved. See Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. Although a reference need not expressly teach that the disclosure contained therein should be combined with another, see Motorola, Inc. v. Interdigital Tech. Corp., 121 F.3d 1461, 1472, 43 USPQ2d 1481, 1489 (Fed. Cir. 1997), the showing of combinability, in whatever form, must nevertheless be “clear and particular.” Dembiczak, 175 F.3d at 999, 50 USPQ2d at 1617. “Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.” Winner International Royalty Corp. v. Wang, 53 USPQ2d 1580, 1587 (Fed. Cir. 2000). Interpreting the Supreme Court’s decision in Dickinson v. Zurko, 50 USPQ2d 1930 (1999) regarding the standard of review in patent matters, the CAFC determined that when upholding a rejection of a claimed invention in an appeal, the CAFC must find that the decision by the USPTO Board of Appeals and Interferences is supported by “substantial evidence,” In re Gartside, 53 USPQ2d 1769 (Fed. Cir. 2000). Accordingly, for a proper rejection based on a combination of references, the rejection must be supported by evidence that the motivation to combine references was not merely feasible, but desirable.

The Office Action has failed to meet this burden. As discussed above, a rejection under 35 U.S.C. § 103 must be based on fact and include a showing of a suggestion, teaching or motivation to combine the references. The Office Action asserts on page 4, with respect to the alleged teaching, suggestion or motivation to combine the references, that “the motivation for doing so would have been to reduce the size of the compressed edge information since

binary image typically has a larger compression ratio. This allegation is a prime example of impermissible hindsight reasoning. Certainly, the outstanding Office Action fails to cite any specific teachings within any of the references to provide motivation for the combination.

Claim 1 requires that the edge information be binary information. Thus, exemplary embodiments of the present invention recognize that an advantage with this approach is that the information amount can be small so the data can easily be transmitted through the network. However, Ishikawa provides no teaching or suggestion for how one of ordinary skill in the art would perform analysis of the binary edge information. Again, Ishikawa is directed to obtaining a smoothed image and then an edge image is obtained by subtracting the smoothed image from the original image. Subsequently, coding is performed. During image decoding, the edge image and the smoothed image are combined to output a restored image. Thus, Ishikawa does not provide enabling disclosure for a system that can analyze binary edge information.

As such, there is no motivation for one of ordinary skill in the art to modify Ishikawa to perform binary analysis of the edge information rather than subtracting the smoothed image from the original image, as one of ordinary skill in the art would have had no ability to identify how to perform such binary analysis to obtain the same results as the process set forth in Ishikawa. Accordingly, it is respectfully submitted that the combination of the applied art is a result of hindsight reconstruction in view of the present specification, and is improper.

Consequently, in view of the present amendment and in light of the foregoing comments, it is respectfully submitted that the invention defined by Claims 1-29, as amended, is patentably distinguishing over the prior art. The present application is therefore believed to be in condition for formal allowance and an early and favorable reconsideration of this application is therefore requested.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Bradley D. Lytle
Attorney of Record
Registration No. 40,073

Kevin McKinley
Registration No. 43,794

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 06/04)